

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
POSITION DUTY STATEMENT**

CLASSIFICATION TITLE Transportation Engineer Civil	DISTRICT/DIVISION/OFFICE 56-Maintenance/SM&I/Office of Specialty Investigations and Bridge Management	
WORKING TITLE Transportation Engineer Civil, Range A-D	POSITION NUMBER 913-625-3135-005	EFFECTIVE DATE May 2012

As a valued member of the Caltrans team, you make it possible for the Department to improve the mobility across California by being innovative and flexible; reporting to work as scheduled; working cooperatively with team members and others; and treating others fairly, honestly and with respect. Your efforts are important to each member of the team, as well as those we serve.

GENERAL STATEMENT:

Under the general direction of a Senior Bridge Engineer, the incumbent will use computer software automation to facilitate the bridge inspection program and management of all engineering inspection reports. As the Bridge Maintenance Application Support Specialist the incumbent will develop and maintain engineering computer applications, including providing training for Intranet/Internet web applications and provide technical support for end users of SM&I applications. May be required to possess and maintain a valid certificate of registration as a Civil Engineer in California.

TYPICAL DUTIES:

- 50% (E) Evaluate and review bridge inspections and management reports and determine data needs for bridge management, maintenance, repair and rehabilitation recommendations. Utilizing knowledge of the engineering data from inspection reports, incumbent will develop, implement, test and support web applications used within the Division of Maintenance, SM&I, such as SMART (Structures Maintenance Automated Report Transmittal), BIRIS (Bridge Inspection Records Information System) based on an Oracle platform and the AASHTO Pontis Bridge Management System based on a Microsoft ASP.Net platform.
- 25% (E) Under the direction of a Senior Bridge Engineer, incumbent will develop SM&I technical manuals. Incumbent will maintain electronic copies of SM&I technical manuals. Incumbent will develop and provide training in the use of the SMART and BIRIS applications. The incumbent will develop on-line training modules for engineering applications.
- 15% (E) Performs tasks (such as report writing, data analysis, inspection reviews and deterioration calculation) related to bridge maintenance, inspection, project development and project tracking as directed by the branch chief. May assist on bridge inspections in the field on occasion. Insure the accuracy and timeliness of inspection and project information in the computer systems pertinent to bridge management.
- 10% (M) Incumbent will serve as staff assistant to a Senior Bridge Engineer, and assist in the dissemination of critical job information to staff. Incumbent will calculate bridge maintenance and rehabilitation repair costs and structure deterioration rates.

SUPERVISION EXERCISED OVER OTHERS

None.

KNOWLEDGE, ABILITIES AND ANALYTICAL REQUIREMENTS

- The incumbent must have comprehensive knowledge of computer programming languages, Visual Basic, Visual C, HTML, or other common programming languages, and a familiarity with the SQL or PL/SQL programming languages.
- Effective verbal and written communication in modern English, ability to follow written and oral directions, ability to work independently, good telephone etiquette, good people skills, and willingness to accept broad responsibilities are just a few of the traits necessary to perform tasks in this position. The incumbent must be able to analyze situations and problems to take appropriate action to resolve problems. The incumbent must be able to diagnose specific problems and develop an effective course of action.
- Engineering applications are standard engineering tools. Knowledge of the mathematical assumptions and analytical methods used within a computer program is required to assure that appropriate principles and practices of civil engineering are followed and adhered to within the program. Must be proficient in the use of Microsoft Office (Word, Excel, PowerPoint, and Access), and other engineer related computer programs and software.
- Knowledge and understanding of Bridge Inspection, Bridge Design, and Bridge Construction principles and practices is desirable. Must have a technical knowledge of stress analysis as applied to bridges as well as the practical experience necessary to recommend appropriate and economical repair strategies.
- Must be able to apply civil engineering principles and practices to derive alternatives and make recommendations for a variety of bridge related problems.
- The incumbent must have the ability to: take independent action; analyze engineering and managerial problems and work effective solutions; complete work assignments on time; perform feasibility and cost analysis studies; write technical manuals and reports; communicate effectively both orally and in writing; work with and consider the needs of others; and anticipate potential problem areas.

CONSEQUENCE OF ERROR/RESPONSIBILITY FOR DECISIONS

Under the supervision of the Branch Chief the incumbent is responsible for tasks pertaining to prioritization and scope of proposed projects. The ability to make proper decisions and judgments is necessary to ensure the safety of in service bridges and to optimize bridge maintenance and rehabilitation expenditures.

PUBLIC AND INTERNAL CONTACTS

Meets with and discusses maintenance problems with the Area Structure Maintenance Engineer, Maintenance Design Engineers, and other Office of Structures personnel such as Geology. May occasionally be called upon to handle routine communications with District and/or City-County personnel regarding maintenance problems.

PHYSICAL, MENTAL AND EMOTIONAL REQUIREMENTS

The employee is required to make critical safety decisions in emergency conditions relative to bridge structural stability with little supervision. The employee must be able to participate in first aid/safety training and may be required to administer first aid in the field in the event of an injury.

Hearing and sight are both essential to job performance because the employee must be able to hear directions, traffic and equipment and must see to perform his/her duties safely. The employee should be able to travel with and work closely with other engineers and act as a team member. The employee is required to sit for long periods of time while driving or using a keyboard and video display terminal.

The employee is required to lift and operate bridge inspection tools and equipment, which weigh as much as 65 pounds. These operations require grasping, fine manipulation, reaching overhead with the tools or equipment, twisting, lifting, squatting, crouching, balancing or bending while carrying the tools and equipment through confined spaces, on ladders or scaffolds, and then observing and recording the results of their operations.

The employee may also be required to work in streambeds and river crossings that are underneath bridge structures, in water depths that may exceed six (6) feet. This involves the ability to wade in water at those depths, or utilize flotation devices. Employee must have the ability to safely access and operate boats or other equipment in strong water currents and under adverse weather conditions. The employee is required to operate a variety of bridge inspection equipment, including under bridge inspection trucks, lift equipment and boats. This requires the employee to utilize his/her motor skills to operate and manipulate gears, drills, foot controls and other vehicle parts that control the motor or machinery.

WORK ENVIRONMENT

The incumbent will work in a climate-controlled office under artificial lighting utilizing a personal computer. The position is predominately office computer work with a moderate amount of public interaction. The office work involves a substantial amount of computer and keyboard work.

I have read, understand and can perform the duties listed above. If you believe you may require accommodation, please discuss this with the hiring supervisor.

Please Print:

EMPLOYEE'S NAME

EMPLOYEE'S SIGNATURE

DATE

I have discussed the duties with and provided a copy of this duty statement to the employee named above.

SUPERVISOR'S NAME
DATE

SUPERVISOR'S SIGNATURE